



Designation: F3304 – 21

Standard Specification for Lamp Fuel and Torch Fuel Packaging¹

This standard is issued under the fixed designation F3304; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification is intended to set forth the packaging requirements for lamp fuel and torch fuel intended for use by consumers in and around the household and which contain 10 % or more petroleum distillates with a viscosity of less than 100 SUS (Saybolt universal viscosity) at 100 °F.

1.2 The specification is not intended to cover materials defined as flammable or extremely flammable.

1.3 This packaging specification is intended to set forth design and performance requirements related to packaging, closures, and product labeling.

1.4 This specification applies to pourable lamp fuel and torch fuel containers with a rated capacity of less than 5 gal intended for household use.

1.5 *Exemptions*—Products defined as a pesticide by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) are exempt from Section 5.1 labeling requirements.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

D3828 Test Methods for Flash Point by Small Scale Closed Cup Tester

¹ This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.72 on Pre-Filled Containers of Flammable and Combustible Liquids.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

D3475 Classification of Child-Resistant Packages

2.2 ANSI Standard:³

ANSI Z535.4 American National Standard Product Safety Signs and Labels

2.3 Other Documents:

16 CFR 1500.14 Products requiring special labeling under Federal Hazardous Substances Act (FHSA)⁴

16 CFR 1500.43(a) Method of test for flashpoint of volatile flammable materials⁴

U.S. Code Title 15—Chapter 30 Section 1263 Federal Hazardous Substances Act; Prohibited acts⁴

16 CFR 1500.121 Labeling requirements; prominence, placement, and conspicuousness under Federal Hazardous Substances Act⁴

16 CFR 1700.15 Poison prevention packaging standards⁴

16 CFR 1701.3 Applicability of special packaging requirements to hazardous substances in large size container⁴

DS/EN 14059 Decorative oil lamps – Standards³

3. Terminology

3.1 Definitions:

3.1.1 *closure*—any structure or device designed to close off the opening of a container and prevent loss of its contents.

3.1.2 *combustible*—any substance having a flashpoint at or above 100 °F (37.8 °C) to and including 150 °F (65.6 °C) as determined by the test method described in 16 CFR 1500.43(a).

3.1.3 *conspicuousness*—information must be located prominently on the label and must be in conspicuous and legible type in contrast by typography, layout, or color with the other printed information on the label.

3.1.4 *container*—non-specific vessel, capable of closure, intended to store and dispense torch fuel and lamp fuel.

3.1.5 *continuous thread (CT) closure*—non-interrupted spiral design-threaded closure; the main purpose of a CT closure is to mate with corresponding bottle threads and provide sealing and re-sealing of the container.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

⁴ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, http://www.access.gpo.gov.

3.1.6 *extremely flammable*—any substance having a flashpoint below 20 °F (−6.7 °C).

3.1.7 *flammable*—any substance having a flashpoint above 20 °F (−6.7 °C) and below 100 °F (37.8 °C).

3.1.8 *household substance*—as defined in 16 CFR 1701.3, any substance which is customarily produced or distributed for sale for consumption or use, or customarily stored, by individuals in or about the household.

3.1.9 *low viscosity hydrocarbon*—liquids containing 10 % or more hydrocarbons and a viscosity of less than 100 SUS at 100 °F.

3.1.10 *opaque package*—a package which employs measures intended to mask the visibility of torch fuel or lamp fuel.

3.1.11 *other cautionary material*—all labeling statements, other than “signal words” or “statement(s)” of principal hazard(s).

3.1.12 *package*—immediate container or wrapping in which any torch fuel or lamp fuel is contained for use or for storage by individuals.

3.1.13 *pesticide*—any substance or mixture of substances for preventing, destroying, repelling or mitigating any pest.

3.1.14 *principal display panel*—the portion(s) of the surface of the immediate container, and of any outer container or wrapping, which bear(s) the labeling designed to be most prominently displayed, shown, presented, or examined under conditions of retail sale.

3.1.15 *rated capacity*—volume indicated on the container may also be termed nominal capacity or maximum filling level.

3.1.16 *safety alert symbol*—a symbol that indicates a hazard; it is composed of an equilateral triangle surrounding an exclamation point.

3.1.17 *secondary display panel*—any surface of the immediate container, and of any outer container or wrapping, which bears labeling.

3.1.18 *signal word*—used to alert consumers to the principal hazards associated with customary and reasonably foreseeable use of the product.

3.1.19 *special packaging*—packaging that is child resistant and senior friendly, as prescribed in 16 CFR 1700.15.

3.1.20 *statement of principal hazard*—that wording descriptive of the principal or primary hazard(s) associated with a hazardous substance.

3.1.21 *type 1A child-resistant closure*—a continuous thread closure requiring a random push-down force while turning to remove from the container.

4. Container Requirements

4.1 Torch and lamp fuel shall be packaged in containers that:

4.1.1 Prevent product loss during storage and shall not have weight loss >1 % when tested according to 7.1.1. This requirement applies to nonmetallic containers.

4.1.2 Are constructed of materials that are chemically resistant for the life of the product and can withstand impact when tested in accordance with 7.1.3.

4.1.3 Are constructed of materials that are chemically resistant for the life of the product and show no pitting, crazing, softening, bubbling, cracking, or tackiness when tested in accordance with 7.1.3.

4.1.4 Are opaque to mask the contents of the container.

4.2 Do not incorporate any object or images commonly recognized as appealing to or intended or use by children under 36 months of age.⁵

NOTE 1—See DS/EN 14059 safety requirements and test methods.

4.3 The shape and design of torch and lamp fuel packaging shall not violate U.S. Code Title 15—Chapter 30 Section 1263(f).

5. Closure Requirements

5.1 Torch or lamp fuel packaging shall meet the performance standards of requirements 16 CFR part 1700.15 when tested according to the methods described in 16 CFR part 1700.20.

5.1.1 Packaging shall maintain its child resistant and senior-friendly characteristics throughout the useful life of the product. (16 CFR § 1700.15(a)). This includes anticipated contact with the torch fuel or lamp fuel, physical wear and stress factors, and the force required for opening and closing the container. Proper functioning of the closure will be maintained for the number of openings and closings reasonably foreseeable for the size and contents of the container. Additionally, closures shall continue to function after being tested according to 7.2. An example of a failure would be the inner and outer caps on a Type 1A closure become locked.

5.1.2 The closures shall include words or symbols indicating how to open and close the container if applicable.

6. Labeling Requirements

6.1 The warning label shall be permanent, conspicuous, and in sans serif font. A conspicuous label is visible during normal use, but not necessarily visible from all positions. Labeling prominence, placement, and conspicuousness shall comply with 16 CFR 1500.121.

6.2 Lamp fuel and torch fuel covered by this specification and distributed in the United States shall be labeled with language according to the requirements of the Federal Hazardous Substances Act 16 CFR 1500.14(b)(3)(ii).

6.3 Principal display panel shall include the following statements. The statements shall be presented in the following sequence:

⁵ CPSC AGE DETERMINATION GUIDELINES: Relating Children’s Ages to Toy Characteristics and Play Behavior.

△ DANGER – Safety Alert symbol and white text set on a red background consistent with ANSI Z535.4 (see Fig. 1)

HARMFUL OR FATAL IF SWALLOWED.

(capitalized and bold)

COMBUSTIBLE. (if product meets definition of combustible, capitalized and bold)

Keep Out of Reach of Children.

(bold and mixed case)

Applicable statement carefully read other display panels containing precautions

6.4 The principal or a secondary display panel shall include the following language enclosed by a border that separates the information from other information displayed on the display surface. The information should be in sans serif and presented in bullet or list format. The statements shall be presented in the following sequence:

△ DANGER – White text set on a red background consistent with ANSI Z535.4.

HARMFUL OR FATAL IF SWALLOWED.

(capitalized and bold)

COMBUSTIBLE. (if product meets definition of combustible, capitalized and bold)

Contains petroleum distillates.

DO NOT drink or ingest.

Avoid frequent or prolonged contact with skin.

DO NOT use near heat, sparks or open flame.

If swallowed NEVER induce vomiting. Call physician, poison control, or 911 immediately.

Replace and secure cap after each use.

Store and dispense fuel from original container.

Throw away when empty.

Keep Out of Reach of Children and Pets.

(bold and mixed case)

6.4.1 The following statement shall be enclosed within the border referenced in 6.4, but spatially separated from the statements required in 6.4. See Fig. 2.

6.4.2 When appropriate, secondary display panels may also include additional language below and outside the border referenced in 6.4, provided it does not contradict required labeling.

6.5 Torch and lamp fuel packaging shall also incorporate an additional safety symbol with warning statement(s) located near the bottle opening in an area that will be visible during use. See Fig. 3.

6.6 Selected labeling material shall be suitably durable for potential exposure to water, torch and lamp fuel and other elements such as sunlight, air pollution, dirt and grime.

6.7 Shall be made of material not adversely affected by water, torch and lamp fuel and shall be permanent and comply with testing per 7.3.

7. Test Methods

7.1 Container Permeability and Chemical Resistance:

7.1.1 Fill container to expected net contents with applicable fuel, induction seal if applicable and secure closure. Weigh the container accurately. After storage for 30 days at 23 °C ± 2 °C (75 °F ± 3.6 °F), reweigh the container and calculate the weight loss. Test should be replicated for each fuel type that may be filled into the package by the manufacturer.

7.1.2 Empty fuel and refill containers with equivalent net weight of room temperature water to match net content volume of applicable fuel and secure closure. Drop each container free fall onto a 1/2-in. steel plate or concrete surface from 4 ft. Drop the container twice in the following sequence: one drop on the bottom and one drop of a side.

7.1.3 Upon completion of the permeability test in 7.1.1 and drop test 7.1.2, empty the container and cut apart in a manner to allow visual inspection of interior surfaces.

7.2 Closure Chemical Resistance:

7.2.1 *Sample Preparation*—Fill packages with applicable fuel, cap and induction seal if applicable. Remove closures induction seals and recap packages tightly.

7.2.2 Place packages in a 48.9 °C (120 °F) environment for a period of 28 days. At the conclusion of the 28-day period, remove packages and allow them to cool to ambient temperature of 20 °C to 30 °C (68 °F to 86 °F) for 24 h. After returning to ambient temperature, check closures to confirm they function as intended.

7.3 Label Durability:

7.3.1 Apply all applicable labels to representative container intended for torch or lamp fuel. Allow labels to set for 24 h at room temperature.

7.3.2 Fuel Interaction:

7.3.2.1 Submerge labeled container in fuel for a period of 2 min.

7.3.2.2 Labels shall have good adhesion after exposure.

7.3.2.3 Labels shall have no illegible or defaced printing when rubbed with cotton rag with thumb or finger pressure.

7.3.3 Water Exposure:

7.3.3.1 Submerge labeled container in water for 24 h.

7.3.3.2 Labels shall remain adhered to the bottle and shall remain legible (that is, no washing away of inks).

7.3.3.3 Labels shall have no illegible or defaced printing when rubbed with cotton rag with thumb or finger pressure.



FIG. 1 Principal Display Panel